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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,896	03/29/2004	Mikio Ikenishi	330-274	1100
23117	7590	06/06/2005	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			FALASCO, LOUIS V	
			ART UNIT	PAPER NUMBER
			1773	
DATE MAILED: 06/06/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/810,896

**Applicant(s)**

IKENISHI ET AL.

**Examiner**

Louis Falasco

**Art Unit**

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2005 and 09 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>28 March 2005</u> . | 6) <input type="checkbox"/> Other: _____  |

PAPERS RECEIVED

The Affidavit and Information Disclosure Statement received 03/28/2005 are acknowledged.

The Amendment to the claims and Remarks received 4/09/2005 are acknowledged.

CLAIMS

The claims are 15 to 33.

DETAILED ACTIONS

*Statutory Basis*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

*Rejections*

1. In view of applicants Amendment to the claims the rejections made in the previous Office action have been withdrawn and the following new rejects are made.

2. Claims 15- 29, 32 and 33 rejected under 35 U.S.C. 103(a) over **Yamamoto et al** (US 6577472) taken with **Zou et al** (US 6294490) or **Zou** (US 6627566).

**Yamamoto et al** teaches the magnetic information recording medium of these claims except the *specific modulus*.

**Yamamoto et al** teaches magnetic information recording medium comprising a magnetic recording layer formed on a glass substrate where the glass containing SiO<sub>2</sub>, of 40 to 75% and B<sub>2</sub>O<sub>3</sub> and Al<sub>2</sub>O<sub>3</sub> of 2 to 45% and 0 to 40% of R'<sub>2</sub>O in which R' is from the group Li, Na and K - see **Yamamoto et al** Table 1 and Table 3. In **Yamamoto et al** the total content of SiO<sub>2</sub>, B<sub>2</sub>O<sub>3</sub>, Al<sub>2</sub>O<sub>3</sub> and R'<sub>2</sub>O is at least 90 mol%. In **Yamamoto et al** the glass substrate is devoid of a chemically strengthened layer as also called for in claim 32- see **Yamamoto et al** col. 2 lns 34-52.

As regard claims 16, 17, 18, 22, 23, 25, 26, 27(22,23) the fragility index is merely applicants measure of fracture toughness. **Yamamoto et al** teaches the same formulation and, noting the Vickers hardness of Table 2, teaches samples treated to have the strengths required by the claims in **Yamamoto et al** - col. 7 lns 60-65 through the process the though a different measure is employed is different. It would have been at least obvious to optimize the glass as evident from **Yamamoto et al** Tables 1 & 3 samples to the claimed strengths.

As regard claims 28, 29 and 33 see with **Zou et al** (col. 5 lns 2, 3 and 9-11) or **Zou** (Fig. 1 and col. 4 lns 51, col. 5 ln 63, col. 9 lns 22-24).

However **Yamamoto et al** points out that the glass substrate strength could be optimized as needed – see **Yamamoto et al** col. 1 lns 13-15, col. 2 ln 23 – 32. The *specific modulus*  $30 \times 10^6$  Nm/kg newly added to the claims under consideration is taught by **Zuo et al** (col. 3 lns 50, 51) or **Zou** (col. 30 lns 29 to 31) in a crystallized alkali glass composition (col. 8 lns 17 to 21 in **Zou et al** or col. 11 lns 11 to 38 in **Zou**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to adopt the *specific modulus*  $30 \times 10^6$  Nm/kg such as shown by **Zuo et al** or **Zuo** in magnetic recording media glass substrate of **Yamamoto et al** for the purpose of increasing mechanical stability of the substrate. One skilled in the art would have been motivated to adopt the *specific modulus* of **Zuo et al** or **Zuo** with the expectation of increasing the strength of the recording medium glass substrate (in **Zuo et al** see col. 3 lns 48-52, col. 4 lns 58, 59 or in **Zuo** see col. 4 lns 30, 31).

3. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Yamamoto et al** with **Zou et al** or **Zou** as applied to claims 15- 29, 32 and 33 above, and further in view of **Saito et al** (US 6475599)

**Yamamoto et al** with **Zou et al** or **Zou** as applied above does not recite glass having a region where the viscosity of at least  $1 \text{ Pa}$  in a range equivalent to the liquidus temperature of the glass for the claimed glass in the recording medium. However **Saito et al** teaches adjusting the viscosity in a range equivalent to the liquidus temperature as

a matter of optimizing the meltability and heightening the rate of polishing particularly when including compounds such as  $\text{Na}_2\text{O}$  as in the present claimed invention – see col. 9 lns 9 – 18 of **Saito et al**.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to adopt the liquidus temperature as shown by **Saito et al** in recording media of **Yamamoto et al** with **Zou et al** or **Zou** for the purpose of improving meltability and polishing magnetic recording medium substrate. One skilled in the art would have been motivated to adopt **Saito et al** to **Yamamoto et al** with **Zou et al** or **Zou** with the expectation of optimizing the meltability and heightening the rate of polishing of the recording media and removing inconsistencies in the substrate see **Saito et al** col. 2 lns 30-34.

4. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Yamamoto et al** with **Zou et al** '490 or **Zou** as applied to claims 15 - 29, 32 and 33 above, and further in view of **Zou et al** (US 6627565).

**Yamamoto et al** with **Zou et al** '490 or **Zou** as applied to claims 15- 27 above does not recite a thermal expansion for the claimed glass in the recording medium. However **Zou et al** '565 points out the convention for glass substrates for magnetic recording medium to have the thermal expansion in the range claimed ( see col. 3 lns 1 and 11 of **Zou et al** '565).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to adopt the thermal expansion in the range as shown by **Zou et al '565** in recording media of **Yamamoto et al** with **Zou et al '490** or **Zou** for the purpose of sufficient workability and in the magnetic recording medium substrate. One skilled in the art would have been motivated to adopt **Zou et al** in recording media of **Yamamoto et al** with **Zou et al '490** or **Zou** with the expectation of increasing the smoothness of the substrate for a recording media see **Zou et al '565** col. 1 lns 15-20.

RESPONSE TO APPLICANT'S ARGUMENTS, AMENDMENT AND AFFIDAVIT

Applicants' Arguments and Amendments filed 4/09/2005 and the Affidavit of *Mikio Ikenishi* filed 3/29/2005 have been fully considered but are moot in view of the newly applied **Zou et al '490** and **Zou** showing the *specific modulus* newly added to the claims and providing motive to modify the teachings of **Yamamoto et al** changing the glass substrate ensures sufficient mechanical stability is provided to the glass substrate. In considering the Affidavit of *Mikio Ikenishi* the range and numbers of samples, i.e., 2 from **Yamamoto et al.**, are too narrow and few to ascertain a trend reasonably extend the probative value required for what has been claimed. There is not the requisite evidence of properties necessary to establish the non-obviousness of instant broadly claimed invention. The Affidavit shows the Young's Modulus of the **Yamamoto et al** sample 'Glass II' being 29.50 X 10<sup>6</sup> this is very close to and could be rounded off to the

claimed  $30 \times 10^6$  in view of the instant claimed  $30 \times 10^6$  having no significant figures in the tenths  $\times 10^6$  decimal position. With 29.50 round off to 30 this would be within the Young's Modulus range claimed. It is the examiners view that the amount of  $\text{SiO}_2$  chosen is not commensurate with **Yamamoto et al** teachings that the Young's Modulus can be raised by merely increasing the  $\text{SiO}_2$  content (see col. 9 lns 11, 12) and this could be accomplished by selection of samples other than at **Yamamoto et al** Table 2 – other **Yamamoto et al** samples suggest having a higher  $\text{SiO}_2$  content (Table 1, 2, 4, 5 etc). It has been demonstrated in the instant case that glass substrate claimed is identical or only slightly different from **Yamamoto et al** structures; the burden of persuasion is on applicants to show that the claimed product exhibited unexpected properties compared with that of the prior art *Ex parte Gray*, 10 USPQ2d 1922 (Bd. Pat. App. & Inter. 1989).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL.

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not



mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### CONCLUSION

The claims are 11 to 33.

- No claim has been allowed.
- Information Disclosure Statement has been received and considered.

### INQUIRES

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Louis Falasco whose telephone number is (571)272-1507.

The examiner can normally be reached on M-F 10:30 - 7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571)272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

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**STEVAN A. RESAN**  
**PRIMARY EXAMINER**